UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. Mark L. McKoy
NEPA Document Manager
FutureGen Project
National Energy Technology Laboratory
U.S. Department of Energy
P.O. Box 880,
Morgantown, WV 26507–0880

Dear Mr. McKoy:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Department of Energy's (DOE) FutureGen Project Draft Environmental Impact Statement (EIS) (CEQ# 20070213). Our general comments are highlighted below.

The FutureGen Project was conceived to support the initiatives and recommendations of the National Energy Policy issued in May 2001. This included research, development, and demonstration programs with goals to develop and demonstrate coal power systems with near zero environmental emissions, while maintaining low production costs. In addition, this project supports the President's announcement emphasizing the need for the FutureGen Initiative, and other federal initiatives such as the National Climate Change Technology Initiative and the Hydrogen Fuel Initiative. These initiatives aim to reduce the Nation's output of greenhouse gas emissions from coal-fired energy production, to improve the global environment, and to provide advanced technologies to meet the world's energy needs.

Through this project, DOE proposes to provide federal funding to the FutureGen Alliance, Inc. for the design, construction, and operation of the first coal-fueled plant to produce electricity and hydrogen (H_2) with geologic sequestration of carbon dioxide. The current foreign government pledges of $80 million in addition to DOE's funding account for 74 percent of the net cost of the project. The goal is to prove the technical feasibility and potential economic viability of co-production of electricity and H_2 fuel from coal, while capturing and sequestering CO_2 and greatly reducing other air emissions. Another goal is to verify the effectiveness, safety, and permanence of CO_2 stored in geologic formations. The long-term benefit would be to test advanced power generation systems using Integrated Gasification Combined Cycle technology at a sufficiently large scale to allow industries and utilities to assess the project's potential for commercial application.

While there are existing power plants that capture CO_2, in order to meet the FutureGen Project objectives, DOE requires advancements in the facility's design, experimentation in a near-laboratory setting, and operational technology development. These advancements would be more appropriate for a research platform, such as the FutureGen Project, rather than an existing commercial power plant. Major components needed to support the proposed project include:

- A power plant site and plant infrastructure;
- A sequestration site for CO_2 injection wells-related infrastructure, with a deep saline formation (i.e., the geologic formation where CO_2 would be stored);
- Utility connections and corridors (e.g., water supply, sanitary wastewater, electric transmission, natural gas pipelines, and CO_2 pipelines); and
- Transportation routes (rail and truck).

DOE has identified four reasonable alternative sites and will determine which sites, if any, are acceptable to host the project. The four sites include Mattoon, Illinois; Tuscola, Illinois; Jewett, Texas; and Odessa, Texas. If DOE approves more than one site, the host site will be selected by the Alliance. After the host site is selected, the Alliance will conduct additional site characterization studies, prepare a site-specific design (including any design modifications that would reduce risks), and obtain relevant environmental, utility, and operational permits for the project. EPA understands that based on the results of the additional site-characterization and site-specific preliminary design, DOE will re-examine the potential risks as part of a Supplemental Analysis or a Supplemental EIS before proceeding with funding for construction. A supplemental EIS may be required if there are substantial changes to the proposed action or significant new circumstances or information relevant to environmental concerns.

Comments/Recommendations

General

The draft EIS indicates in several sections that FutureGen will use injection wells permitted as *Class V (experimental) wells* under EPA's Underground Injection Control program. While this is appropriate under the current regulatory structure, EPA is developing a strategy that may determine how large-scale, and commercial-scale, geologic sequestration projects will be permitted in the future. A new management framework for geologic sequestration injection wells may establish a totally new class of injection wells, with requirements tailored specifically for CO_2 geologic sequestration. It may become advantageous for injection wells related to FutureGen to be permitted under such a classification scheme. EPA will continue to develop this framework over the next several years, as data are collected from the pilot-scale and demonstration-scale geologic sequestration projects, and from research and development efforts led by DOE and their Regional Sequestration Partnerships.

Cumulative Impacts

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In making this determination, some basis should be established for consideration for the appropriate delineation of both spatial and temporal boundaries, identifying "reasonably foreseeable future actions" surrounding the proposed action. The draft EIS identifies the spatial boundary of cumulative impacts (within a 50-mile radius). However, the temporal boundary of the impacts is not clear. DOE expects the plant would operate for at least 20 to 30 years, and potentially up to 50 years. The draft EIS indicates that this project would potentially use up 1.6 billion gallons of water/year and that much of this water may be lost to the local area and downstream consumers. For this reason, EPA recommends that the cumulative impacts of water use be evaluated for at least the potential 50-year operational life of the project.

Protecting Underground Sources of Drinking Water

The draft EIS discusses public "water supply aquifers," "potable drinking water aquifers" and "near-surface freshwater aquifers" without defining what these terms mean. The Safe Drinking Water Act defines underground sources of drinking water and describes how they must be considered under the Underground Injection Control program. We suggest that the final EIS contain a definition for each of the three types of aquifers that are discussed.

Wetlands

EPA recommends that the draft EIS provide more details on how many wetlands may be impacted at each alternative site. For example, a table of direct and indirect impact acreages would be useful. For each location alternative, we recommend describing specific mitigation where impacts cannot be avoided; that is, the location of potential mitigation sites, wetland type, and ratios.

Base on the above issues we have rated the draft EIS Environmental Concerns/Insufficient Information (EC-2), (see enclosed "Summary of EPA Rating System").

We appreciate the opportunity to review this draft EIS. We look forward to reviewing the final EIS related to this project. The staff contact for the review is Marthea Rountree and she can be reached at (202) 564-7141.

Sincerely,

Anne Norton Miller
Director
Office of Federal Activities

Enclosure:
Summary of EPA Rating System